

English Version

**Aerosol containers - Metal containers with 25,4 mm aperture -
Measurement of contact height**

Réipients pour aérosols - Réipients métalliques avec
ouverture de 25,4mm - Mesurage de la hauteur de contact

Aerosolverpackungen - Metallbehälter mit einer Öffnung
von 25,4 mm - Messung der Kontakthöhe

This European Standard was approved by CEN on 14 October 2005.

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Foreword

This document (EN 14850:2005) has been prepared by Technical Committee CEN/TC 261 "Packaging", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2006, and conflicting national standards shall be withdrawn at the latest by May 2006.

This draft European Standard is one of a series of thirteen related standards with the following titles:

EN 14847, *Aerosol containers — Tinplate containers — Dimensions of the 25,4 mm aperture.*

EN 14848, *Aerosol containers — Metal containers with 25,4 mm aperture — Dimensions of valve cups.*

EN 14849, *Aerosol containers — Glass containers — Dimensions of aerosol valve ferrules.*

EN 14850, *Aerosol containers — Metal containers with 25,4 mm aperture — Measurement of contact height.*

EN 14851, *Aerosol containers — Aerosol foam flammability test.*

EN 14852, *Aerosol containers — Determination of the ignition distance of the spray jet.*

EN 14853, *Aerosol containers — Enclosed space ignition test.*

EN 14854, *Aerosol containers — Glass containers — Dimensions of the neck finish.*

prEN 15006, *Metal aerosol containers — Aluminium containers — Dimensions of the 25,4 mm (one inch) aperture.*

prEN 15007, *Metal aerosol containers — Tinplate containers — Dimensions of three-piece cans.*

prEN 15008, *Metal aerosol containers — Dimensions of 1-piece aluminium can with 25,4 mm aperture.*

prEN 15009, *Aerosol containers — Bicompartmented aerosol containers.*

prEN 15010, *Aerosol containers — Aluminium containers — Tolerances of the fundamental dimensions in connection with the clinch.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

Introduction

The contact height is a measurement used for adjusting the clinching tool (jaws) and is therefore indispensable, but alone is not sufficient, to ensure safe sealing of the container. Its control during the production of aerosol containers helps to ensure safe sealing and uniformity of the product.

1 Scope

This European Standard describes a method of measuring the contact height of the compression closure between the valve cup and the aperture of an aerosol container.

This standard applies to aerosol containers with 25,4 mm apertures as specified in EN 14847 and prEN 15006 fitted with aerosol valve cups as specified in EN 14848.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 14847, *Aerosol containers — Tinsplate containers — Dimensions of the 25,4 mm (one inch) aperture.*

EN 14848, *Aerosol containers — Metal containers with 25,4 mm aperture — Dimensions of valve cups.*

prEN 15006, *Metal aerosol containers — Aluminium containers — Dimensions of the 25,4 mm (one inch) aperture.*

3 Terms and definitions

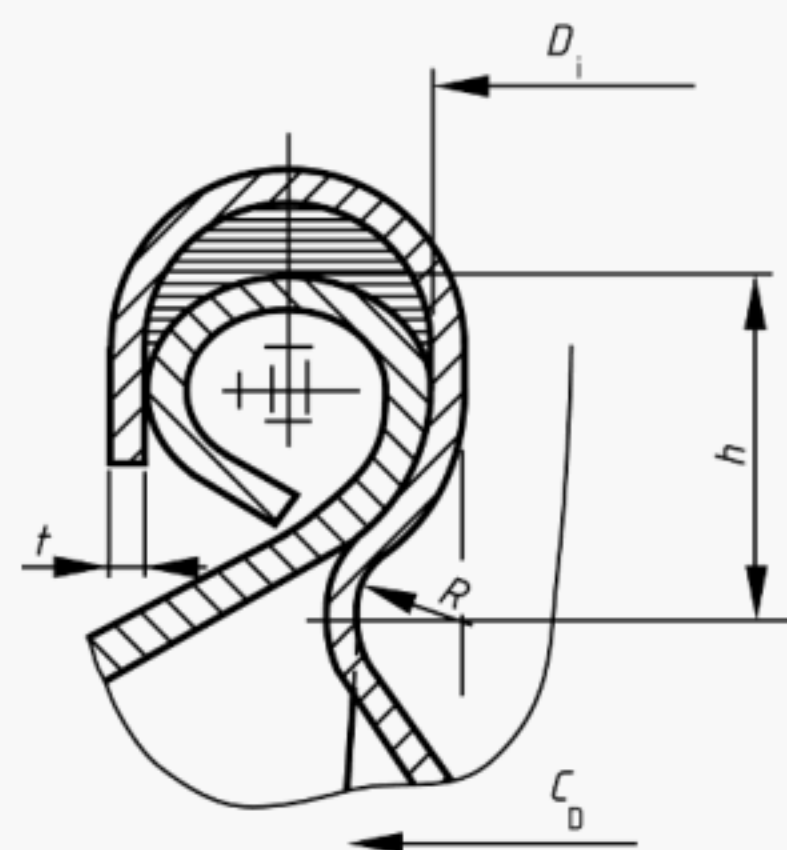
For the purposes of this document, the following terms and definitions apply.

3.1

contact height

distance between the plane of the top of the lip of the aerosol container's aperture and the centre of the radius of curvature of the extremities of the jaws of the clinching tool when fixing the valve cup

NOTE See Figure 1.



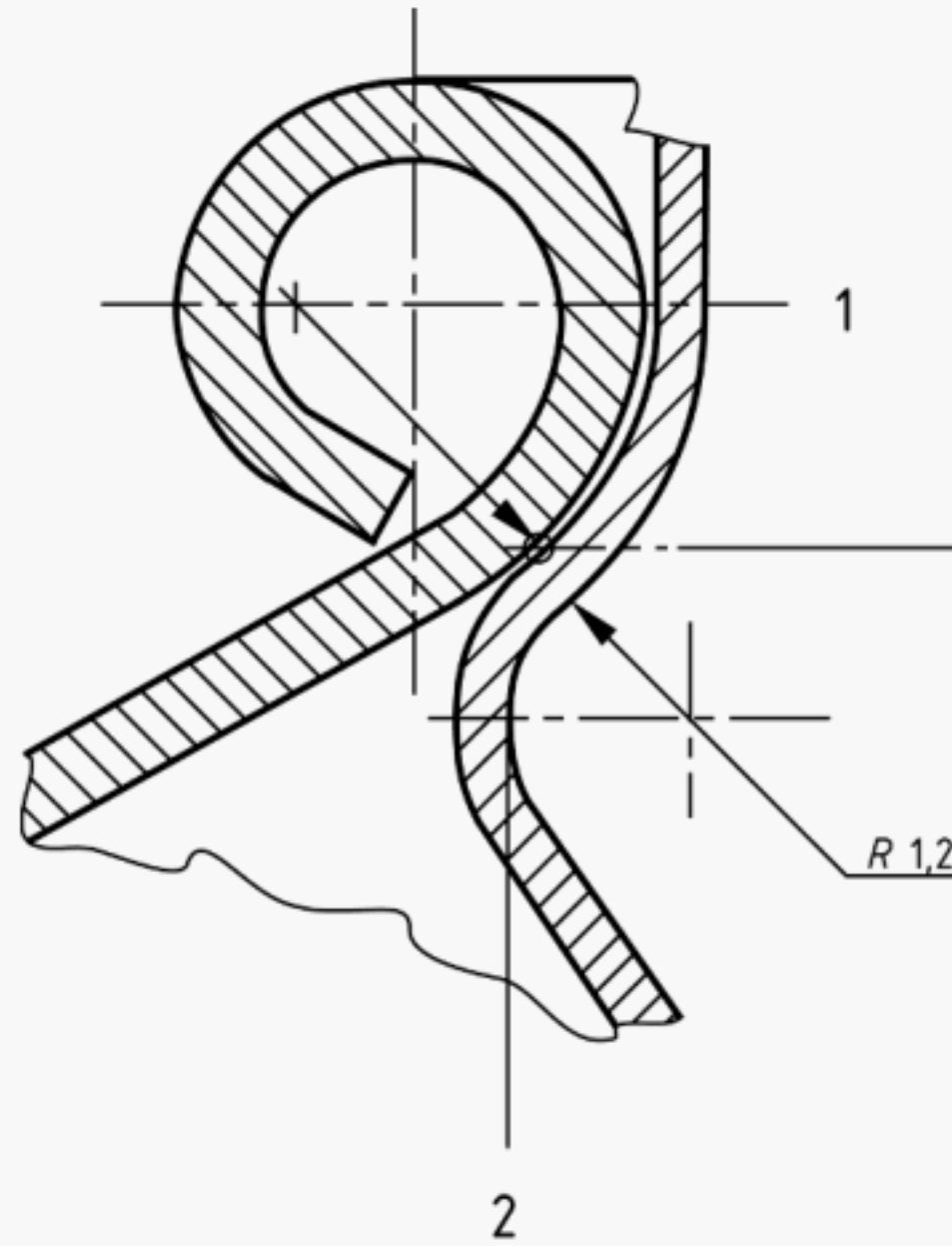
Key

D_i	Internal diameter of aperture	=	25,4 mm
t	Thickness of the wall of the cup	=	0,3 mm
R	Radius of the jaws	=	1,2 mm
C_D	Diameter of the jaws	=	27,1 mm
h	Contact height		hmm

Figure 1 — Contact height symbols

4 Apparatus

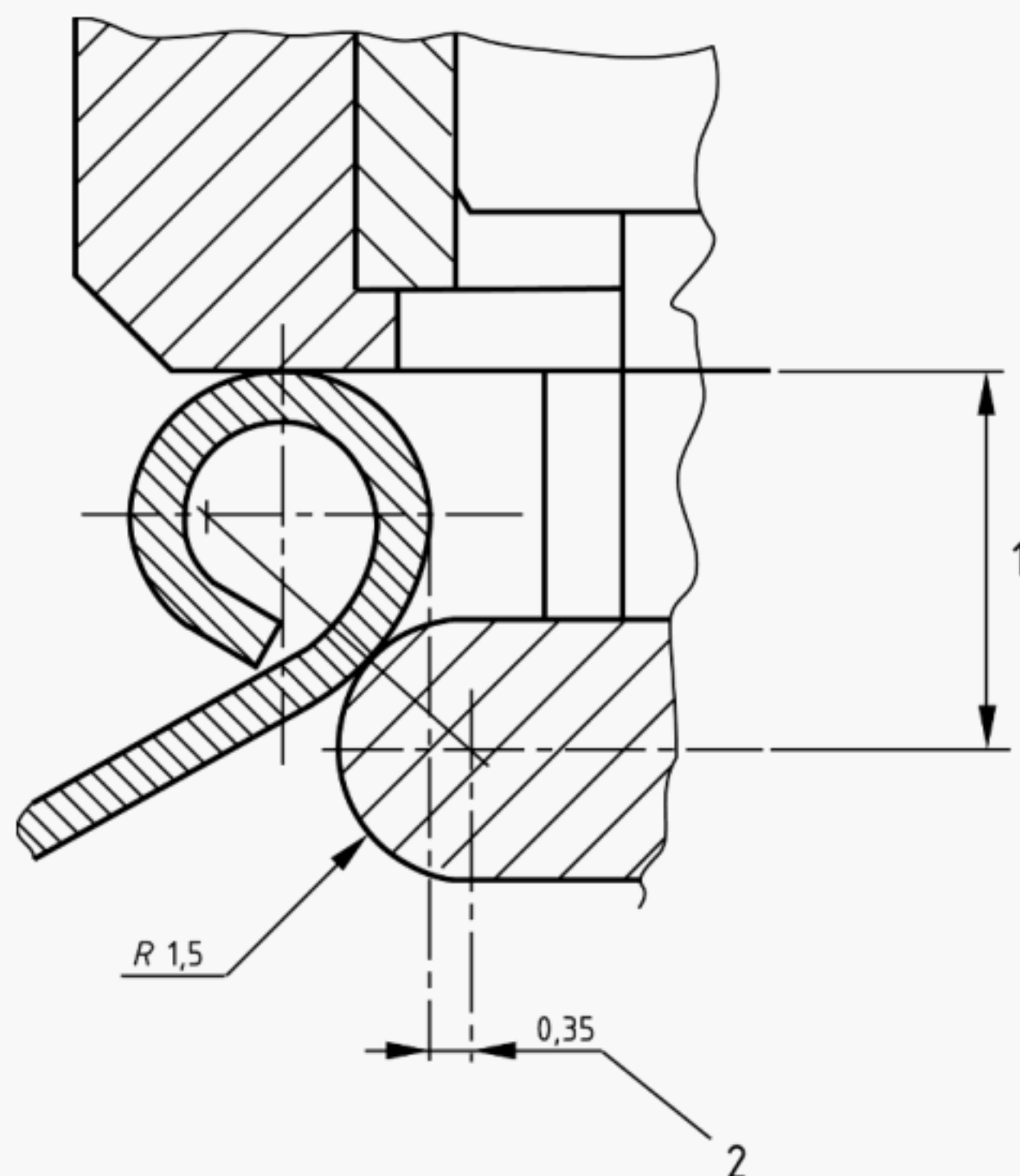
4.1 Measuring instrument, as shown in Figure 3 and specified in clause 5, that reproduces the clinching conditions of Figure 1.



Key

- 1 Point of hard contact
- 2 Diameter of the clinching jaws

Figure 2 — Diameter of the clinching jaws



Key

- 1 Contact height
- 2 Constant of the instrument

Figure 3 — Constant of the instrument

5 Procedure

Replace the tips of the clinching tool, which have a radius of curvature of 1,2 mm and which form a clinch diameter of 27,1 mm, by a measuring instrument that has a radius r in mm given by:

$$r = R_c + t$$

where

R_c is the radius of curvature of the clinching tool, in millimetres (mm) = 1,2 mm;

t is the thickness of the wall of the mounting cup, in millimetres (mm) = 0,3 mm.

Arrange it to touch the internal profile of the aperture at the point of direct contact (see Figure 2). The centre of the 1,5 mm radius will be 0,35 mm (constant for the instrument, see Figure 3) from the vertical internal tangent of the aperture, and at a distance h (contact height) from the horizontal tangential plane of the aperture.

The value 0,35 mm is given by the formula:

$$R + t - (C_D + 2t - Di) / 2 = 0,35$$

by substituting the symbols by the values given in Figure 1.

NOTE Measuring instruments based on these principles are commercially available.

Since these instruments give comparative results they shall first be adjusted using a setting piece.

After setting the instrument to zero with the setting piece, measure the contact height at three equidistant points on the aperture. The contact height is the arithmetic mean of the three readings. Also record the maximum and minimum values.

The contact element which has a radius of curvature 1,5 mm is held in contact with the internal profile of the aperture by a spring.

6 Test report

The test report shall include the following:

- a) number of containers tested and their type;
- b) equipment used;
- c) number of satisfactory containers (see EN 14847 and prEN 15006);
- d) number of unsatisfactory containers (see EN 14847 and prEN 15006);
- e) date of testing.

Bibliography

- [1] EN 14848, *Aerosol containers – Metal containers with 25,4 mm aperture – Dimensions of valve cups.*